

AMENDMENT TO THE SPECIFICATION

Replace the following paragraph beginning at page 1, last paragraph and ending at page 2, line 11 with the following rewritten paragraph:

-- As a method of detecting the change of the electric potential within a cell, a patch clamp method has been known. Fig. 17 is a cross sectional drawing schematically illustrating the principle of a patch clamp method. In a patch clamp method, as is shown in Fig. 17 (a), a cell 102 is brought into close contact with the tip of a glass pipette 101 by, for example, aspirating the cell 102 with the glass pipette 101 first, and as is shown in Fig. 17 (b), the cell membrane of the cell 102 within the area that is closely contacted to the glass pipette 101 is broken with additional force by aspiration to equilibrate the electric potential between inside of the pipette 101 and inside of the cell 102. Accordingly, the change of the electric potential within the cell 102 can be detected by detecting the electric potential of the electrode 103 within the pipette as the difference from the electric potential of the reference electrode 105 [104] through the use of a detection means 104.--

Replace the following paragraph beginning at page 13, 1st paragraph with the following rewritten paragraph:

-- Examples of the substrate which is preferably used as the substrate 1 include those formed with a semiconductor material typified by single crystal silicon, amorphous silicon, silicon carbide, silicon dioxide, silicon nitride and the like; a composite material of these semiconductor materials typified by a silicon on insulator (SOI) and the like; an inorganic insulating material selected from the group consisting of glass, quartz glass, alumina, sapphire, and forsterite[, ~~silicon carbide, silicon dioxide, and silicon nitride~~]; and an organic material selected from the group consisting of polyethylene, ethylene, polypropylene, polyisobutylene, polyethylene terephthalate (PET), unsaturated polyester, fluorocarbon resin, polyvinyl chloride,

polychlorinated vinylidene, polyvinyl acetate, polyvinyl alcohol, polyvinyl acetal, an acrylic resin, polyacrylonitrile, polystyrene, an acetal resin, polycarbonate (PC), polyamide, a phenol resin, a urea resin, an epoxy resin, a melamine resin, a styrene acrylonitrile copolymer, an acrylonitrile butadiene styrene copolymer, a silicon resin, polyphenylene oxide and polysulfone. More preferably, a substrate that is formed with single crystal silicon, SOI, PET, or PC may be used.--

Replace the following paragraph beginning at page 23, 2nd paragraph with the following rewritten paragraph:

-- Fig. 5 is a cross sectional drawing schematically showing the constitution of the cell immobilization device 19b according to this Embodiment. Fig. 6 is a cross sectional drawing viewed along the line B-B depicted in Fig. 5. However, Fig. 5 illustrates the state in which a cell 6 is immobilized in the cell immobilization device 19b [49], but Fig. 6 illustrates with the cell 6 omitted therefrom. Moreover, in Fig. 6, a lead wire 9 formed on the lower face of the sensor part 16 is illustrated by a dashed line.--

Replace the following paragraph beginning at page 23, last paragraph and ending at page 24, line 10 with the following rewritten paragraph:

-- A substrate 1b has a through-hole 14b. An electrode 11b is formed on the hole wall surface 141b and the marginal edge of the hole opening 142b of the through-hole 14b. The electrode 11b is formed by making an electrode material adhered on the hole wall surface 141b and the marginal edge of the opening 142b of the through-hole 14b [44] using a vacuum vapor deposition method or a sputtering method. The surface of the electrode 11b is coated with the dielectric layer 12b. For coating of the electrode 11b with the dielectric layer 12b [42], a similar method to that in the first Embodiment can be employed. Coating of the electrode 11b with a dielectric layer 12b may be carried out such that the capacitance of the electric double layer of the

interface of the electrode 11b with a 0.1 M electrolyte solution becomes preferably equal to or greater than $25 \mu\text{F}/\text{cm}^2$, more preferably equal to or greater than $27 \mu\text{F}/\text{cm}^2$, with the applied voltage of 0 V, similarly to the first Embodiment.--

Replace the following paragraph beginning at page 25, last paragraph and ending at page 26, line 16 with the following rewritten paragraph:

-- Although Fig. 7 illustrates with a solution retaining part omitted therefrom, the divider member (having a similar constitution to the divider member 4 of the third Embodiment) that constitutes the solution retaining part may be provided either per every one electrode 11c, or per a set of multiple electrodes 11c. The constitution provided with the divider member per every one electrode 11c is useful, for example, in the measurement of responsiveness to a drug of the immobilized cell on each electrode 11c, whilst the constitution provided with the divider member per a set of multiple electrodes 11c is useful, for example, in carrying out the analysis of a network because a network can be formed among nerve cells immobilized on each electrode 11c. A lead wire 9c is not formed on the upper face of the sensor part 16c, therefore, the sensor part 16c [46] and the divider member are not necessarily constituted separately, but it is possible to give an integrated formation.--

Replace the following paragraph beginning at page 27, last paragraph and ending at page 28, line 9 with the following rewritten paragraph:

-- Fig. 9 is a cross sectional drawing schematically showing the constitution of the cell immobilization device 19e of this Embodiment. Fig. 10 is a cross sectional drawing viewed along the line C-C depicted in Fig. 9. However, Fig. 9 illustrates the state in which a cell 6 is immobilized in the cell immobilization device 19e, but Fig. 10 illustrates with the cell 6 omitted therefrom. Moreover, in Fig. 10, a lead wire 9e formed on the lower face of the sensor part 16e [46] is illustrated by a dashed line. Because the cell immobilization device 19e has a different

Serial No.: 10/694,396

constitution in only the sensor part from the cell immobilization device 19 of the first Embodiment, the explanation of other constitutions except for the sensor part is omitted through assigning the identical number.--